UNITED STATES DISTRICT COURT

for the

DISTRICT OF MAINE

CONSERVATION LAW FOUNDATION, INC. Plaintiff, v. UNITED STATES of AMERICA, ENVIRONMENTAL PROTECTION AGENCY, LISA P. JACKSON, Administrator, United States Environmental Protection Agency, and H. CURTIS SPALDING, Regional Administrator, Region 1, United States Environmental Protection Agency, Defendants.	)	Civil Action No.

COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

INTRODUCTION AND REQUEST FOR RELIEF

1. Plaintiff Conservation Law Foundation, Inc. brings this citizen suit pursuant to Section 505(a)(2) of the Water Pollution Prevention and Control Act (known as the Clean Water Act ("CWA"), 33 U.S.C. § 1365(a)(2)) and pursuant to the Administrative Procedures Act ("APA"), 5 U.S.C. §§ 701-706.

2. Plaintiff requests that this Court review the Maine law that prevents native anadromous alewives (*Alosa pseudoharengus*) from returning to their natural habitat in the St. Croix River, 12 M.R.S.A § 6134 ("Alewife Law"), and determine that it effects a change of

Maine's water quality standards that requires the United States Environmental Protection Agency ("EPA"), its Administrator, Lisa P. Jackson, in her official capacity, and its Regional Administrator for Region 1, H. Curtis Spalding, in his official capacity, to perform mandatory and nondiscretionary duties pursuant to 33 U.S.C. §§ 1313(c)(2) and 1313(c)(3). Those duties include the duty to review and approve or disapprove the changes made by the State of Maine through the Alewife Law to the water quality standards for the St. Croix River.

3. Plaintiff seeks declaratory judgment and injunctive relief under 28 U.S.C. §§ 2201 and 2202, attorneys' fees and costs of litigation under 33 U.S.C. § 1365(d), and such other relief as this court deems just and proper under 28 U.S.C. § 2202.

4. In addition or in the alternative to the relief sought under the CWA, Plaintiff seeks relief pursuant to the APA, based on the Defendants' arbitrary and capricious actions, and attorneys' fees and costs pursuant to the Equal Access to Justice Act ("EAJA"), 5 U.S.C. § 504; 28 U.S.C. § 2412.

JURISDICTION AND VENUE

5. This Court has original subject matter jurisdiction pursuant to 33 U.S.C. § 1365(a)(2), (district court jurisdiction of citizen suits against administrator under the CWA), 28 U.S.C. § 1331 (federal question) and 28 U.S.C. §§ 2201 and 2202 (declaratory judgment).

6. Plaintiff has satisfied the statutory pre-suit notice requirements by serving certified letters dated and postmarked July 29, 2011 (the "Notice Letters") on the Defendants. 33 U.S.C. § 1365(b)(1)(A). *See* Exhibit A: Letters and Proof of Service.

7. More than sixty days have passed since Plaintiff served the Notice Letters.

8. Defendants have failed to respond to the Notice Letters. They have failed to this day to perform their mandatory duty to review changes made by the State of Maine to the water quality standards for the St. Croix River, first in 1995 and again in 2008 by the Alewife Law.

9. Venue properly lies in the District of Maine because a substantial part of the acts complained of occurred in this district and the water body that is the subject of the action is located in Washington County, Maine. 28 U.S.C. § 1391(b)(2) and 33 U.S.C. § 1365(c)(1).

10. In addition, venue properly lies in Maine because Plaintiff maintains a principal place of business in Portland, Cumberland County, Maine. Its members reside throughout Maine and have suffered harm as a result of Defendants' actions and inactions in Washington County, Maine. Finally, Defendants conduct business in the State of Maine from their regional office in Massachusetts.

PARTIES

11. Plaintiff Conservation Law Foundation, Inc. ("CLF") is a nonprofit public-interest environmental advocacy organization incorporated under Massachusetts law and in good standing in Maine, with a principal place of business in Portland, Cumberland County, Maine. Plaintiff is a person as defined in the CWA. 33 U.S.C. §1362(5).

12. Plaintiff has approximately 3,000 members throughout Maine and the other New England states. Plaintiff's members have suffered and continue to suffer particular harm as a result of the events described in this complaint, including:

    a. Stephen Barr: Stephen Barr is a resident of North Yarmouth, Cumberland County, Maine. Stephen Barr is a member in good standing of Plaintiff CLF. During the tenure of his membership, Stephen has canoed and fished the St.

Croix River and the lack of alewives has adversely impacted his interest in those activities. The failure of EPA to perform its duty to review the Alewife Law, which lowered the water quality of the St. Croix by eliminating access to 98% of alewife spawning habitat and decimating the alewife population in the St. Croix River, continues to harm his interests.

b. Marion Freeman: Marion Freeman is a resident of Freeport, Cumberland County, Maine, has a family home on the shore of Passamaquoddy Bay in St. Andrews, New Brunswick, and is a member in good standing of Plaintiff CLF. During the tenure of her membership, Marion has boated, fished and recreated in Passamaquoddy Bay and the lack of alewives in the St. Croix River and Passamaquoddy Bay has adversely impacted her interests in those uses. The failure of EPA to perform its duty to review the Alewife Law, which lowered the water quality of the St. Croix by eliminating access to 98% of alewife spawning habitat and decimating the alewife population in the St. Croix River, continues to harm her interests.

c. Clinton "Bill" Townsend: Bill Townsend is a resident of Canaan, Somerset County, Maine. He has been a member in good standing of Plaintiff CLF since shortly after its founding. During the tenure of his membership, Bill has fished in many reaches of the St. Croix watershed. Bill has a deep and abiding interest in the restoration of native anadromous fish such as alewives to Maine's rivers, including the St. Croix River. As President of Maine Rivers, Bill obtained funding and data to support studies that established that alewives are not detrimental to smallmouth bass populations. He also testified before the

Legislature in 2008 during debate over the Alewife Law, and has traveled around the State watching alewife runs and fishing for them. Bill's interests have been adversely impacted by the Alewife Law. The failure of EPA to perform its duty to review the Alewife Law, which lowered the water quality of the St. Croix by eliminating access to 98% of alewife spawning habitat and decimating the alewife population in the St. Croix River, continues to harm his interests.

d. Carlton Davis Pike: Davis Pike is a resident of Lubec, Washington County, Maine. He is a member in good standing of Plaintiff CLF, and is a Board Member of CLF. Davis has a longstanding interest in the health and sustainability of the Passamaquoddy Bay marine ecosystem, of which alewives are a cornerstone. Davis, whose family has resided in Lubec for over 200 years, also has a longstanding interest in the health of the ecosystem in Passamaquoddy Bay and the economies of Lubec and other Downeast Maine communities that depend so heavily on that ecosystem. Davis has observed a decline in the numbers of groundfish in Passamaquoddy Bay since alewives, a critical forage fish, have been blocked from their natural habitat in the St. Croix River. The failure of EPA to perform its duty to review the Alewife Law, which lowered the water quality of the St. Croix by eliminating access to 98% of alewife spawning habitat and decimating the alewife population in the St. Croix River, continues to harm his interests.

13. Defendant United States Environmental Protection Agency ("EPA") is a federal governmental agency headquartered in Washington, D.C., with ten regional offices. The

EPA is responsible for the overall administration and enforcement of the CWA, including review of and approval or disapproval of changes in water quality standards and anti-degradation policies pursuant to 33 U.S.C. §§ 1313(c)(2) and 1313(c)(3).

14. Defendant Lisa Jackson ("Defendant Jackson") is sued in her official capacity as the Administrator of the EPA. Defendant Jackson bears ultimate responsibility for ensuring that the EPA carries out its mandatory and nondiscretionary duty to review and approve or disapprove new or revised water quality standards promulgated by states.

15. Defendant H. Curtis Spalding ("Defendant Spalding") is sued in his official capacity as the Administrator for EPA's New England Region ("Region 1"). EPA Region 1 includes jurisdiction over Maine. As Region 1 Administrator, Defendant Spalding is charged with the regional supervision, administration and enforcement of the CWA, including ensuring that the EPA performs its nondiscretionary and mandatory duty to review and approve or disapprove new or revised water quality standards.

CLEAN WATER ACT AND RELATED STATE LAW

16. The purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). The CWA requires all states to adopt water quality standards for their water bodies, subject to EPA review. 33 U.S.C. § 1313(c)(1). The water quality standards must: (1) designate uses of the waterway (*e.g.*, protection of aquatic life and recreational uses); (2) set water quality criteria, expressed as either narrative or numeric standards; and (3) contain an anti-degradation policy that protects existing uses. *See* 33 U.S.C. § 1313; 40 C.F.R. § 131.10-.12.

17. The water quality standard must take into account the water's "use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes . . .." 33 U.S.C. § 1313(c)(2).

18. Pursuant to the CWA, 33 U.S.C. § 1313, Maine has established four classes of water quality standards for the state's freshwater rivers, ranging from "Class AA" to "Class C" waters, 38 M.R.S.A. § 465, and has enacted an anti-degradation policy mandating that "[e]xisting in-stream water uses and the level of water quality necessary to protect those existing uses must be maintained and protected." 38 M.R.S.A. § 464(4)(F)(1).

19. Class AA is the highest classification, and is applied to waters which are outstanding natural resources with free-flowing and natural habitat for fish and other aquatic life. 38 M.R.S.A. § 465(1).

20. Class A is the second highest classification. Class A waters must be of such quality that they are suitable as habitat for fish and other aquatic life, and the "habitat must be characterized as natural." 33 M.R.S.A. § 465(2)(A). "Natural" is defined to mean "living in, or as if in, a state of nature not measurably affected by human activity." *Id.* at § 466(9).

21. Class B is the third highest classification. Class B waters must be of such quality that they are suitable as unimpaired habitat for fish and other aquatic life. 38 M.R.S.A. § 465(3)(A). "'Unimpaired' means without a diminished capacity to support aquatic life." *Id.* at § 466(11).

22. Class C is the lowest classification. Class C waters must be of such quality that they are suitable as a habitat for fish and other aquatic life. 38 M.R.S.A. § 465(4)(A).

23. Class GPA is the sole classification for great ponds and natural lakes and ponds less than 10 acres in size. As with Class A waters, Class GPA waters must provide habitat characterized as "natural" for fish and other aquatic life. 38 M.R.S.A. § 465-A(1).

24. Maine's anti-degradation law provides, in relevant part, that existing in-stream water uses and the level of water quality necessary to protect those existing uses must be maintained and protected. Existing in-stream water uses are those uses which have actually occurred on or after November 28, 1975, in or on a water body whether or not the uses are included in the standard for classification of the particular water body. Existing in-stream water uses include:

    a. Aquatic, estuarine and marine life present in the water body;

    b. Wildlife that utilize the water body;

    c. Habitat, including significant wetlands, within a water body supporting existing populations of wildlife or aquatic, estuarine or marine life, or plant life that is maintained by the water body;

    d. The use of the water body for recreation in or on the water, fishing, water supply, or commercial activity that depends directly on the preservation of an existing level of water quality. Use of the water body to receive or transport waste water discharges is not considered an existing use for purposes of this antidegradation policy; and

    e. Any other evidence that, for divisions (a), (b) and (c), demonstrates their ecological significance because of their role or importance in the functioning of the ecosystem or their rarity and, for division (d), demonstrates its historical or social significance.

38 M.R.S.A. § 464(4)(F)(1).

EPA DUTY TO REVIEW WATER QUALITY STANDARDS

25. A State is authorized to change or modify water quality standards but must submit any new or revised water quality standards to EPA for review. 33 U.S.C. § 1313(c); 40 CFR § 131.21. Even if a State fails to submit a new or revised standard, EPA has a mandatory duty to review any state law or policy that effects a change to state water quality standards.

26. Upon review, EPA has a non-discretionary duty to either approve or disapprove the revisions. 33 U.S.C. § 1313(c)(3). The review must determine: whether the state has adopted criteria that protect the designated water uses; whether the State has followed its legal procedures for revising or adopting standards; and whether the State standards which do not include the uses specified in section 101(a)(2) are based upon appropriate technical and scientific data and analyses. 40 C.F.R. § 131.5(a).

27. In addition, the EPA review must contemplate whether the revision or change to the water quality standards complies with the anti-degradation policy each state must adopt. 33 U.S.C. § 1313(d)(4)(B); *see* 40 C.F.R. § 131.12. The change must not degrade the water quality.

28. If the EPA approves of the revised standards, the EPA must notify the state of its approval. 33 U.S.C. § 1313(c)(3). If the EPA determines that the revised standards are not consistent with the CWA, the EPA must notify the state of the changes required to correct the inconsistency. 33 U.S.C. § 1313(c)(3). If the state fails to adopt such changes, the EPA must promptly promulgate new standards consistent with the CWA. 33 U.S.C. § 1313(c)(4).

FACTUAL BACKGROUND

HISTORY OF ALEWIVES ON THE ST. CROIX RIVER

29. The St. Croix River forms part of the international boundary between the United States and Canada. The river rises in the Chiputneticook Lakes and flows south and southeast, between Calais, Maine and St. Stephen, New Brunswick, emptying into Passamaquoddy Bay.

30. Historically, the St. Croix River had large runs of anadromous fish, particularly Atlantic salmon, American shad, blueback herring and alewife. Until 1825, reports establish that the average annual catch of salmon from the St. Croix at Salmon Falls near Calais, Maine was 18,000 and alewives came "in such numbers that it is supposed they could never be destroyed. The number of shad were [sic] almost incredible." *See* Exhibit B: Flagg, "Historical and Current Distribution and Abundance of the Anadromous Alewife (*Alosa pseudoharengus*) in the St. Croix River," A Report to the State of Maine Atlantic Salmon Commission, May 30, 2007. ("Flagg Report")

31. Alewives, and their close "cousin," blueback herring (commonly collectively referred to as river herring), are anadromous fish that spend the majority of their time at sea but return to freshwater to spawn.

32. Both species are native to Maine rivers and both have co-evolved and co-existed with other native fish in Maine's streams, rivers, ponds and lakes for thousands of years.

33. Alewives have historically returned to Maine's rivers and streams in early May to early June to spawn in upstream lakes and ponds. A female alewife can produce 60,000 – 100,000 eggs. Seaward migration of young alewives runs from late July to November.

34. Alewives are a critical cornerstone species for the ecology of freshwater, estuarine, and marine environments. Alewives:

a. Are a key food source for many species including striped bass, bluefish, tuna, cod, haddock, halibut, American eel, brook trout, rainbow trout, brown trout, lake trout, landlocked salmon, smallmouth bass, largemouth bass, pickerel, pike, white and yellow perch, seabirds, bald eagle, osprey, great blue heron, gulls, terns, cormorants, seals, whales, otter, mink, fox, raccoon, skunk, weasel, fisher, and turtles;

b. Are the preferred bait for the spring lobster fishery in Downeast Maine;

c. Provide alternate prey for osprey, eagles, great blue heron, loons and other fish-eating birds who might otherwise forage on downstream migrating juvenile Atlantic salmon;

d. Provide cover for upstream migrating adult salmon that may be preyed upon by eagles or osprey;

e. Provide cover for young salmon in estuaries and open ocean where they might be captured by seals; and

f. Are managed by thirty-five Maine municipalities with commercial harvesting rights to alewives on thirty-nine streams and rivers. These runs provide revenue to the towns, many of which lease their fishing privileges to independent fishermen.

Maine Department of Marine Resources, *River Herring Fact Sheet*, http://www.maine.gov/dmr/searunfish/alewife/index.htm.

35. Beginning in 1825, a series of dams on the lower St. Croix River blocked the passage of anadromous fish, including alewives, to their natural spawning grounds.

36. By the late 1880s, with anadromous fish all but extirpated, other fish, particularly the non-native smallmouth bass, were introduced into the St. Croix River and its chain of lakes, creating a new and popular sport fishery.

37. At the beginning of the 20th century, the United States and Canada entered into the 1909 Boundary Water Treaty. The treaty established the International Joint Commission ("IJC") to investigate, resolve and prevent boundary water disputes and issues between the countries, including the St. Croix River.

38. The IJC authorized construction of the Grand Falls Dam (circa 1915) on the St. Croix River in or around Kelleyland, Washington County, Maine. The dam created Grand Falls Flowage, a sprawling impoundment of water.

39. The IJC also authorized construction of the Woodland Dam (circa 1915) downriver of the Grand Falls Dam in or around Baileyville, Washington County, Maine. This dam created the Woodland Lake Impoundment.

40. The United States authorized the maintenance, use and operation of both dams in 1916. *An Act to Authorize the Maintenance and Operation of Dams Across the St. Croix River At Baileyville and Grand Falls, Maine*, ch. 407, 39 Stat. 534 (1916). In relevant part, that Act provided that the dams must comply with all United States laws currently in effect or subsequently enacted by Congress. *Id*.

41. At the time construction was authorized, both the Woodland Dam and the Grand Falls Dam were required to include fish passage for alewives and other anadromous fish.

42. Neither the Grand Falls Dam nor the Woodland Dam are subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) under section 23 (b) of the Federal Power Act because they were built prior to 1920. 16 U.S.C. § 816.

43. Milltown Dam sits below the Woodland and Grand Falls Dams, and is the first dam on the St. Croix River. It is the oldest hydroelectric dam in Canada, and was constructed in the late 1880's with a fishway to allow passage of anadromous fish, including alewives.

44. In 1964, state-of-the-art fishways were reconstructed at the Woodland and Grand Falls Dams, for the purpose of passing alewives and other fish.

45. The fishway at Milltown Dam, however, allowed only limited passage until the early 1980's, when its fishway was modernized. In 1981, before the Milltown Dam's fishway was modernized, less than 200,000 alewives returned to the St. Croix. The combination of effective fish passage at the Milltown Dam, Woodland Dam and Grand Falls Dams led to a resurgence of alewives in the St. Croix River and its lakes and ponds so that by 1987, more than 2.6 million alewives returned. Flagg Report at 6.

46. In 1989 Maine upgraded the high quality waters of the St. Croix River and its tributaries from the outlet of Chiputneticook Lakes to its confluence with the Woodland Lake Impoundment from Class B to Class A waters. At the time, more than a million alewives returned to the St. Croix River to spawn. *Id*.

47. This upgrade to Class A required that the St. Croix River provide "natural" habitat, *i.e.*, habitat characterized as if in "a state of nature not measurably affected by human activity," for alewives and other anadromous fish. This use cannot be degraded without review or approval by EPA.

48. As required by the CWA, Maine submitted this change in the water quality standard for the St. Croix River, along with changes for other water bodies in Maine, to the EPA, which reviewed and ultimately approved them.

49. At the same time that alewives were restored to the St. Croix River in the millions, the population of smallmouth bass in one of the lakes above the Grand Falls Dam, Spednic Lake, decreased significantly.

THE ALEWIFE LAWS

50. Parties with an economic interest in the smallmouth bass fishery claimed that the decrease in smallmouth bass populations was somehow related to the restoration of the native alewife. In response to significant political pressure but in the absence of any scientific support, in 1995 the Maine Legislature passed "An Act to Stop the Alewives Restoration Program in the St. Croix River," as emergency legislation (the "1995 Alewife Law"). 40 L.D. 520, 117th Legis. (Me. 1995). In summary, the emergency preamble stated that alewives and smallmouth bass compete for the same food source, the competition could significantly affect the bass fishery, and therefore an emergency existed. *Id*. The law ordered the State to require the owners of the Woodland and Grand Falls dams to configure or operate the fishways on them in a manner that prevented the passage of alewives. *Id*.; 12 M.R.S.A. § 6134.

51. The 1995 Alewife Law was not submitted to the EPA for review and approval or disapproval. The EPA did not review the 1995 Alewife Law for consistency with the CWA and the St. Croix River's Class A water quality standard.

52. The 1995 Alewife Law prevented alewives from accessing 100% of their "natural habitat" above the Woodland and Grand Falls Dams. It caused the St. Croix River alewife population to plummet from millions of fish to just 900 fish in 2002. Exh. B: Flagg Report at 6-7.

53. Contrary to the 1995 Alewife Law's preamble, several subsequent scientific, peer-reviewed studies concluded that alewives and smallmouth bass can and do in fact coexist without detriment to either species. *See e.g*., Kircheis, *et al*., *Analysis of Impacts Related to the Introduction of Anadromous Alewives Into a Small Freshwater Lake in Central Maine, USA*

(2002, revised 2004), at http://www.maine.gov/dmr/searunfish/reports/lakegeorge04.pdf; *see also* Willis, St. Croix River Alewife Smallmouth Bass Interaction study (2006) at http://www.maine.gov/dmr/searunfish/reports/stcroixalewifebass06.pdf.

54. In light of the scientific evidence, an effort to repeal the 1995 Alewife Law was mounted in 2008. That effort met with minimal success -- the Maine Legislature passed legislation that only allowed fish passage at Woodland Dam, but continued to prohibit fish passage at Grand Falls Dam. 12 M.R.S.A. § 6134 (as enacted by Public Law, Chapter 587, LD 1957) ("2008 Alewife Law").

55. Allowing operation of the fish passage facility at the Woodland Dam restored access to just two percent of the natural spawning habitat for alewives. Alewives continued to be blocked from 98 percent of their natural spawning habitat in the St. Croix River above the Grand Falls Dam.

56. The 2008 Alewife Law created a habitat on the St. Croix River that could not be characterized as "natural" as it was in fact "measurably affected by human activity," namely the effective extirpation of alewives from their native spawning habitat.

57. As with the 1995 Alewife Law, the 2008 Alewife Law was not submitted to EPA for review. EPA did not review the 2008 Alewife for consistency with the CWA or the St. Croix River's Class A water quality standard.

58. The number of alewives to return to the river remains severely depleted – in 2008, only 12,261 alewives returned to the St. Croix.

59. In 2009, Maine again changed the designation of a portion of the upper St. Croix and the impoundment behind the Grand Falls Dam. That section, the Grand Falls Impoundment between Black Cat Island and Route 1, had retained Class B status in 1989 because of a

discharge. By 2009, the discharge was eliminated and the water was upgraded to Class GPA to recognize it functioned like a Class A pond rather than a Class B river system.

60. The change was submitted to and approved by EPA. EPA failed to consider whether this portion of the river could meet the GPA water quality standards or, if it did review the change, failed to properly apply the GPA water quality standards to that section of the river.

COUNT I: VIOLATION OF MANDATORY DUTY, CWA SECTION 303(C) AND REGULATIONS

61. Plaintiff repeats and re-alleges the allegations in the foregoing paragraphs as if fully set forth herein.

62. States must submit any new or revised water quality standard to EPA for review. 33 U.S.C. § 1313(c)(2); 40 CFR § 131.20(c).

63. EPA has a mandatory duty to review any new or revised water quality standard, whether a State submits it or not. 33 U.S.C. § 1313(c)(3); 40 CFR § 131.21(b).

64. In 1989, Maine raised the water quality of the St. Croix River above the Woodland Lake Impoundment from Class B to Class A. At that time, the river provided natural habitat for millions of alewives through successful restoration efforts including operating and effective fish ladders at the Woodland and Grand Falls Dams.

65. As required by the CWA, Maine submitted the change to EPA for review and the EPA approved that change.

66. In 1995, Maine's legislature passed the first Alewife Law with the express purpose and effect of barring passage of alewives at both the Woodland and Grand Falls Dams, preventing them from reaching 100% of their spawning habitat in the St. Croix River watershed.

67. The 1995 Alewife Law degraded the water quality standard of the St. Croix above the Woodland Lake Impoundment by eliminating natural habitat mandated by its Class A water quality standards.

68. The 1995 Alewife Law, as either a direct change in the water quality standard for the St. Croix River or as a policy change that affects the application and implementation of that water quality standard, should have been reviewed by the EPA for consistency with the CWA and the St. Croix River's Class A water quality standards. 33 U.S.C. § 1313(c)(3); 40 CFR § 131.20(c).

69. The EPA did not review the Alewife Law enacted in 1995.

70. In 2008, Maine's legislature revised the 1995 Alewife Law.

71. Despite the considerable scientific evidence that alewives do not compete with smallmouth bass for food or habitat and were vital to the St. Croix ecosystem, the Legislature only amended the Alewife Law to allow alewives to pass through the Woodland Dam but not the Grand Falls Dam, reopening only 2% of the natural spawning habitat for alewives.

72. The Alewife Law enacted in 2008 continued to degrade the Class A water quality standard of the St. Croix River above the Grand Falls Dam Impoundment by eliminating the alewives' access to their natural habitat.

73. The 2008 Alewife Law, as either a direct change in the water quality standard for the St. Croix River or as a policy change that affects the application and implementation of that water quality standard, should have been reviewed by the EPA for consistency with the CWA and with the St. Croix River's Class A water quality standards. 33 U.S.C. § 1313(c)(3); 40 CFR § 131.20(c).

74. The EPA did not review the 2008 Alewife Law to determine its consistency with the CWA and the St. Croix River's Class A water quality standards.

75. By failing to perform its nondiscretionary duty to review and approve or disapprove of the changes effected by the Alewife Law to the St. Croix River's water quality standards, the EPA has violated its mandatory duties under 33 U.S.C. § 1313(c)(3) and EPA's regulations.

COUNT II: VIOLATION OF APA

76. Plaintiff repeats and re-alleges the allegations in the foregoing paragraphs as if fully set forth herein.

77. In 1989, DEP presented and the Maine Legislature enacted legislation that changed the designation of the St. Croix River from Class B to Class A from its source at Chiputneticook Lake to the Woodland Dam Impoundment. In 2009, DEP presented and the Maine legislature enacted legislation that changed the designation of a portion of the Grand Falls Impoundment from Class B to Class GPA.

78. DEP presented both changes to the EPA for review.

79. The EPA failed to carry out a complete and thorough review of the 2009 changes in designation as required by the CWA and its enabling regulations.

80. A complete and thorough review of the 2009 changes would have included review of scientific studies and evidence that alewives which were present and abundant in the Grand Falls Impoundment portion of the St. Croix River when the water was designated Class A in 1989 were no longer present in 2009.

81. If the EPA had reviewed this fact, it could not have approved the 2009 Class GPA water quality standard because, between 1989 (when it last reviewed the water quality standard for the upper St. Croix) and 2009, Maine had enacted laws that changed and downgraded

the water quality of the St. Croix river by degrading its habitat from the Class A habitat standard of "natural" to, at best, the Class B habitat standard of "unimpaired."

82. If EPA had properly reviewed the 2009 change in the water quality standard for the St. Croix River, it would have had to order Maine to take steps to meet the St. Croix's Class A designation by allowing alewives to reach their natural spawning habitat.

83. EPA's failure to properly review the 2009 change in water quality was arbitrary, capricious and not in accordance with the CWA and its implementing regulations, in violation of the APA, 5 U.S.C. § 706(2)(A).

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court:

1. Declare that EPA's failure to perform its mandatory duty to review the Alewife Law(s) as part of the entirety of the State of Maine's submission of its water quality standards violated the CWA, 33 U.S.C. § 1313(c)(3), and alternatively, that EPA's decision not to review the Alewife Law(s) as either a water quality standard or policy affecting water quality standards was arbitrary, capricious and otherwise not in accordance with law, under the APA, 5 U.S.C. § 706(2)(A);
2. Declare that EPA's approval of Maine's 2009 water quality standards for the St. Croix River was arbitrary, capricious and otherwise not in accordance with law, under the APA, 5 U.S.C. § 706(2)(A);
3. Award Plaintiff its reasonable fees, costs, expenses, and disbursements, including attorneys' fees, associated with this litigation; and,

Grant such other and further relief as the Court may deem just and proper.

Dated: May 31, 2012

/s/ Sean Mahoney
SEAN MAHONEY
CONSERVATION LAW FOUNDATION, INC.
47 Portland Street, Suite 4
Portland, Maine 04101
smahoney@clf.org
207-210-6439 ext 5012

/s/ Ivy L. Frignoca
IVY L FRIGNOCA
CONSERVATION LAW FOUNDATION, INC.
47 Portland Street, Suite 4
Portland, Maine 04101
ifrignoca@clf.org
207-210-6439 ext 5011

7004 2510 0000 7721 9009

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®
WASHINGTON DC 20460

OFFICIAL USE

Postage	$ $0.44
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$2.30
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $5.59

0102
Postmark Here
07/29/2011

Sent To: Lisa Jackson
Street, Apt. No.; or PO Box No.: 1200 Pennsylvania Ave. N.W
City, State, ZIP+4: Washington, DC 20460

PS Form 3800, June 2002 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Lisa Jackson
EPA Administrator
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

COMPLETE THIS SECTION ON DELIVERY

A. Signature: [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery: 8/3/11

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label)

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-154

Goes w/ St. Croix NOI

==========

PORTLAND MAIN POST OFFICE
PORTLAND, Maine
041019998
2269030102-0094
07/29/2011 (207)871-8437 12:40:25 PM

==========

Sales Receipt

Product Description	Sale Unit Qty	Unit Price	Final Price
WASHINGTON DC 20460			$0.44
Zone-4 First-Class			
Letter			
.50 oz.			
Expected Delivery: Mon 08/01/11			
Return Rcpt (Green			$2.30
Certified			$2.85
Label #:	70042510000077219009		
Customer Postage			-$5.59
Subtotal:			$0.00
Issue PVI:			$0.00

EXHIBIT A

clf
conservation law foundation

For a thriving New England

CLF Maine 47 Portland Street, Suite 4
Portland, ME 04101
P: 207.210.6439
F: 207.221.1240
www.clf.org

July 29, 2011

Lisa Jackson
EPA Administrator
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: St. Croix River

Dear Ms. Jackson,

On behalf of the Conservation Law Foundation ("CLF") and its members, this letter hereby serves as a 60-day notice of intent to sue the Environmental Protection Agency ("EPA") and Kurt Spalding, EPA Regional Administrator, Region 1, pursuant to section 505(a)(2) of the Clean Water Act ("CWA"), 33 U.S.C. § 1365(a)(2), for the failure of the EPA to perform non-discretionary duties under the CWA. Specifically, the EPA has failed to review and approve or disapprove changes to the State of Maine's water quality standards for the St. Croix River as required under section 303(c) of the CWA. *See id.* § 1313(c)(2), (c)(3). CLF intends to file suit to obtain injunctive and declaratory relief as set forth below, in addition to any other appropriate relief, including the recovery of attorney fees and costs of litigation.

I. Legal Background

The Clean Water Act

The purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *Id.* § 1251(a); *see also S. D. Warren Co. v. Me. Bd. of Envtl. Prot.*, 547 U.S. 370, 385 (2006). In order to fulfill that mandate, the CWA requires that states adopt water quality standards for their waterbodies, subject to EPA review on a triennial basis.[1] 33 U.S.C. § 1313(c)(1). Water quality standards must include three elements: (1) designated use of waterways (e.g., the protection of aquatic life and recreational uses); (2) water quality criteria, expressed as either narrative or numeric standards; and (3) an antidegradation policy that protects existing uses. *See id.* § 1313(c)(2)(A), (d)(4)(B); 40 C.F.R. § 131.10-.12.

Any change to an existing water quality standard must be consistent with the state's antidegradation policy and must be submitted to the EPA for review. *See* 33 U.S.C. §

[1] Maine's last submission was in 2009 and was in large part approved by the EPA in May 2010. Maine's proposal to lower the water quality classification for a portion of Long Creek was objected to by CLF and remains under review by the EPA.

1313(d)(4)(B), (c)(2)(A).[2] Upon review, the EPA has a non-discretionary duty to either approve or disapprove the revisions. *See id.* § 1313(c)(3). In reviewing the revised water quality standards, the EPA must consider, among other things, "whether the state has adopted criteria that protect the designated water uses" and "[w]hether the State has followed its legal procedures for revising or adopting standards." 40 C.F.R. § 131.5. If the EPA approves of the revised standards, the EPA must notify the state of its approval within 60 days. *See* 33 U.S.C. § 1313(c)(3). Conversely, if the EPA determines that the revised standards are not consistent with the requirements of the CWA, the EPA must notify the state of the changes required to correct the inconsistency within 90 days. *See id.* If the state fails to adopt such changes, the EPA must "promptly" promulgate new standards consistent with the CWA. *See id.* § 1313(c)(4).

Maine's Water Quality Standards

Pursuant to section 303(c) of the CWA, *id.* § 1313(c), Maine has established four classes of water quality standards for the state's freshwater rivers, ranging from "Class AA" waters to "Class C" waters.[3] *See* 38 M.R.S.A. § 465. Larger waterbodies are segmented and may contain multiple classifications. Additionally, Maine has enacted an antidegradation policy mandating that "[e]xisting in-stream water uses and the level of water quality necessary to protect those existing uses must be maintained and protected." *Id.* § 466(12).

II. Factual Background

The St. Croix River system is an international waterbody forming, in part, the boundary between the State of Maine and New Brunswick, Canada. Alewives, an anadromous species,[4] are native to the St. Croix River and play an important ecological role in both freshwater and marine food chains and nutrient cycles. *See* Richard Dill et al., Int'l Joint Comm'n, *An Adaptive Plan for Managing Alewife in the St. Croix River Watershed, Maine and New Brunswick* 1 (2010). Although dams and water pollution have had a deleterious effect on the St. Croix alewife population since the 1860s, fish passage facilities[5] and improved water quality in the 1980s led to a rapid increase in alewife spawning populations, with over 2.6 million fish returning in 1987. *See id.* at 1-2.

The resurgence in alewife populations coincided with a period of declining smallmouth bass populations—a non-native species—within the St. Croix watershed. *See id.* at 2. With little scientific data, some parties claimed that the decline in the population of the non-native

---

[2] *See also* EPA Water Quality Handbook § 4.4.2 (stating that "[n]o activity is allowable under the anti-degradation policy which would partially or completely eliminate any existing use whether or not that use is designated in a State's water quality standards.").

[3] Additionally, Maine has established three classes for marine and estuarine waters, 38 M.R.S.A. § 465-B; two classes for groundwater, *id.* § 465-C; and one class for lakes and ponds, *id.* § 465-A.

[4] An anadromous species is one that lives in saltwater but spawns in freshwater.

[5] Prior to 1980, inadequate fish passage at the Milltown Dam—the first dam on the St. Croix River—effectively prevented alewives from migrating upstream. In 1980, a new fishway was constructed at Milltown and "coupled with state of the art fishways constructed at the Woodland and Grand Falls Dams [the next two dams on the River] allowed alewives unimpeded access to nearly all the headwaters of the St. Croix." Lewis N. Flagg, *Historical and Current Distribution and Abundance of the Anadromous Alewife (Alosa pseudoharengus) in the St. Croix River* 1 (2007).

smallmouth bass was tied to the restoration of the native population of alewives. That claim has since been proven to be without any merit. *See id.* Nonetheless, in response to such claims, the Maine Legislature passed a bill in 1995, 12 M.R.S.A. § 6134, with the explicit purpose of blocking alewife passage at the Woodland Dam and Grand Falls Dam on the St. Croix.[6] *See id.* The bill effectively eliminated access to alewife spawning habitat in the St. Croix watershed, and, as a direct and foreseeable result of the legislation, there was a complete collapse of the St. Croix alewife stock.[7] *See* Dill et al., *supra*, at 2.

After a study on the dynamics between smallmouth bass and alewife populations showed no impacts of the latter on the health of the former,[8] the Maine Legislature amended section 6134 in 2008 to allow passage at the Woodland Dam. *See* FB Envtl., Int'l Joint Comm'n, *St. Croix River: State of the Watershed Report* 18 (2008). However, passage at the Woodland Dam restores only 2 percent of available habitat for alewives. *See id.* Accordingly, alewives have been, and continue to be, prevented from accessing 98 percent of their natural habitat in the St. Croix River above the Grand Falls Dam. *See* Dill et al., *supra*, at 2.

III. The Legislation Blocking Alewife Passage on the St. Croix River Represents a *De Facto* Change in Maine's Water Quality Standards

Under Maine's water quality standards, the St. Croix River above the Grand Falls Dam is classified as "Class A" water.[9] By enacting section 6134 in 1995, and amending the statute in 2008, the Maine Legislature effectively changed the water quality standards for the segment of the St. Croix River above the Grand Falls Dam, making it impossible for that section of the St. Croix to meet the "Class A" water quality standards.

Maine's "Class A" water quality standards mandate both that "[t]he habitat be characterized as natural" and that "[t]he aquatic life . . . shall be as naturally occurs." 38 M.R.S.A. § 465(2).

"Natural" "means living in, or as if in, a state of nature not measurably affected by human activity." *Id.* § 466(9). "As naturally occurs" "means conditions with essentially the same physical, chemical and biological characteristics as found in situations with similar habitats free of measurable effects of human activity." *Id.* § 466(2). In contrast, Class B waters must only be "unimpaired," which means "without a diminished capacity to support aquatic life." *Id.* §§ 465(3)(A), 466(11). The alewife is a native anadromous species to the St. Croix River, requiring habitat that allows for both upstream and downstream migration. The portion of the St. Croix River above the Grand Falls Dam is designated Class A, *id.* § 467(13)(A)(1), and is unarguably

---

[6] In a complaint filed against the State of Maine officials charged with implementing that statute, a group of plaintiffs have alleged that the statute violates the Clean Water Act and thus violates the Supremacy Clause. *See* Friends of Merrymeeting Bay v. Olsen, No. 1:11-cv-00167 (D. Me. filed Apr. 22, 2011). By filing this NOI, CLF takes no position on the merits of that claim nor can or should this NOI be a consideration in determining the merits of the claim.

[7] The number of alewives returning to the St. Croix River declined from 2.6 million in 1987 to 900 in 2002. *See* Dill et al., *supra*, at 2.

[8] The study found that alewives posed no negative effects on St. Croix smallmouth bass populations. *See* Dill et al., *supra*, at 3.

[9] The impounded waters immediately above the Grand Falls Dam are classified as Class GPA; however, the free-flowing waters above the impoundment are classified as "Class A." *See* 38 M.R.S.A. § 467(13).

the natural habitat for that native fish. Thus, by passing legislation explicitly aimed at preventing a naturally occurring species—alewives—from accessing 98 percent of its natural habitat in the St. Croix River above the Grand Falls Dam, the Maine Legislature intentionally and effectively changed the water quality standards for that section of the St. Croix to Class B – that is, it still has the capacity to support alewives but because of the measurable effects of human activity (a dam with blocked fish passage) alewives cannot naturally access that habitat. Likewise, by blocking alewife migration to and from the waters above Grand Falls Dam, the Maine Legislature is altering the naturally occurring, physical characteristics of the St. Croix River, also a fundamental change to the water quality standards. Consequently, the culmination of the 1995 legislation and the subsequent 2008 amendment is a *de facto* change in Maine's water quality standards. *See Miccosukee Tribe of Indians of Fla. v. United States*, No. 95-0533-CIV-DAVIS, 1998 WL 1805539, at *16 (S.D. Fla. Sept. 14, 1998) (finding that a Florida law that created an exemption from state water quality standards created a *de facto* change in water quality standards); *Miccosukee Tribe of Indians of Fla. v. United States*, No. 04-21448-CIV, 2008 WL 2967654, at *12 (S.D. Fla. July 29, 2008).

IV. The EPA Has a Non-Discretionary Duty to Review the Changes to Maine's Water Quality Standards

A State is authorized to seek changes to the water quality standards for its waterbodies. *See* 33 U.S.C. § 1313(c)(2)(A). Section 303(c)(2)(A) of the CWA requires that *any* changes or revisions to a State's water quality standards be submitted to the EPA for review and approval or disapproval. *See id.* If a State wishes to remove a designated use or establish sub-categories of a use requiring less stringent criteria, a State may do so provided it conducts a use attainability analysis (UAA) and seeks EPA approval. *See* 40 C.F.R. § 131.10(j); *FPL Energy Me. Hydro LLC v. Dept. of Envtl. Prot.*, 926 A.2d 1197, 1204 (Me. 2007) (Maine could not apply a less stringent standard for hydropower impoundments than the EPA-approved Class C standard without conducting a UAA and obtaining EPA approval).[10]

The EPA's duty to review revised water quality standards is non-discretionary. *See Fla. Pub. Interest Research Group Citizen Lobby, Inc. v. EPA*, 386 F.3d 1070, 1080 (11th Cir. 2004); *see also Miccosukee Tribe of Indians of Fla. v. United States*, 105 F.3d 599, 602 (11th Cir. 1997). To that end, a state's failure to submit to EPA revisions to water quality standards "cannot circumvent the purposes of the CWA" or the obligation of EPA to review those revisions. *Id.* at 602. Thus, "[e]ven if a state fails to submit new or revised standards, a change in state water quality standards could invoke the mandatory duty imposed on the [EPA] to review new or revised standards." *Id.*; *see also Fla. Pub. Interest*, 386 F.3d at 1089. In determining whether such a duty applies, it is the *effect* of the action in question that determines whether the standards have changed. *See Miccosukee Tribe of Indians of Fla.*, 105 F.3d at 603.

---

[10] EPA may not approve the removal of a designated use or the application of less stringent criteria unless the State demonstrates that "attaining the designated use is not feasible" as a result of one or more of six factors. *See* 40 C.F.R. § 131.10(g)(1)–(6). If EPA were to require Maine to conduct a UAA for the St. Croix, the State would be unable to show that the Class A standards ("aquatic life…shall be as naturally occurs") are unattainable. By unblocking the Grand Falls Dam and allowing for fish passage, the designated uses of the River would be attained.

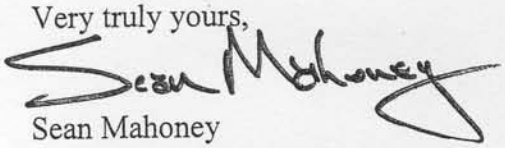
Similarly, a state's failure to follow the mandated procedures for amending its water quality standards does not absolve the EPA of its non-discretionary duty to review those revisions. *See Fla. Pub. Interest*, 386 F.3d at 1089. Rather, the state's failure to follow proper procedure is one of the very factors that the EPA must consider in reviewing the revised standards. *See* 40 C.F.R. § 131.5(a)(3) (requiring the EPA to review "[w]hether the State has followed its legal procedures for revising or adopting standards"); *see also Fla. Pub. Interest*, 386 F.3d at 1089-90 (finding the district court, in determining that a Florida rule did not change water quality standards, improperly relied on the fact that the state did not follow the proper procedures). Thus, the fact that the change to the St. Croix River's water quality standard was not based on a UAA nor effectuated by a change to the statute setting water quality standards but a separate statute is of no matter. What matters is that a change to the St. Croix River's water quality standard was made and has not been reviewed for approval or disapproval by EPA.

The legislation at issue has the effect of changing Maine's water quality standards because it explicitly aims to extirpate a natural species from a "Class A" water, and it does so by altering the natural, physical and biological characteristics of the water (i.e., blocking migratory passage). Thus, the EPA has a non-discretionary duty to disapprove these significant changes to the water quality standards for the St. Croix River. Failure to do so allows Maine to circumvent its responsibilities under the CWA and prevent EPA from fulfilling its legal obligations. Moreover, the fact that Maine changed the St. Croix River's water quality standards by codifying the revisions under a different title of the Maine Code is a strong indication that the Maine legislature was well aware that it would not be able to achieve EPA approval of the change under the CWA. Finally, even if the State were to follow proper procedure to effectuate the change it made in 1995 and reaffirmed in 2008 by conducting a UAA, there is no conceivable manner in which a UAA would meet the criteria necessary to support such a change.

V. Conclusion

The EPA has a non-discretionary duty to review and disapprove of Maine's revised water quality standards for the St. Croix River under section 303(c) of the CWA. Unless EPA performs that duty and takes steps to remedy this ongoing violation of the CWA, CLF intends to file suit at the close of the 60-day notice period pursuant to 33 U.S.C. § 1365(a) and will seek appropriate injunctive and declaratory relief, as well as a recovery of attorney fees and litigation costs as provided under the Act.

Very truly yours,



Sean Mahoney
Vice President
Conservation Law Foundation

cc: Attorney General Eric Holder
Region 1 Administrator Curt Spalding

clf
conservation law foundation

For a thriving New England

CLF Maine 47 Portland Street, Suite 4
Portland, ME 04101
P: 207.210.6439
F: 207.221.1240
www.clf.org

July 15, 2011

Curt Spalding
Regional Administrator
EPA New England
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Re: St. Croix River

Dear Mr. Spalding,

On behalf of the Conservation Law Foundation ("CLF") and its members, this letter hereby serves as a 60-day notice of intent to sue the Environmental Protection Agency ("EPA") and Kurt Spalding, EPA Regional Administrator, Region 1, pursuant to section 505(a)(2) of the Clean Water Act ("CWA"), 33 U.S.C. § 1365(a)(2), for the failure of the EPA to perform non-discretionary duties under the CWA. Specifically, the EPA has failed to review and approve or disapprove changes to the State of Maine's water quality standards for the St. Croix River as required under section 303(c) of the CWA. *See id.* § 1313(c)(2), (c)(3). CLF intends to file suit to obtain injunctive and declaratory relief as set forth below, in addition to any other appropriate relief, including the recovery of attorney fees and costs of litigation.

I. Legal Background

The Clean Water Act

The purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *Id.* § 1251(a); *see also S. D. Warren Co. v. Me. Bd. of Envtl. Prot.*, 547 U.S. 370, 385 (2006). In order to fulfill that mandate, the CWA requires that states adopt water quality standards for their waterbodies, subject to EPA review on a triennial basis.[1] 33 U.S.C. § 1313(c)(1). Water quality standards must include three elements: (1) designated use of waterways (e.g., the protection of aquatic life and recreational uses); (2) water quality criteria, expressed as either narrative or numeric standards; and (3) an antidegradation policy that protects existing uses. *See id.* § 1313(c)(2)(A), (d)(4)(B); 40 C.F.R. § 131.10-.12.

Any change to an existing water quality standard must be consistent with the state's antidegradation policy and must be submitted to the EPA for review. *See* 33 U.S.C. §

[1] Maine's last submission was in 2009 and was in large part approved by the EPA in May 2010. Maine's proposal to lower the water quality classification for a portion of Long Creek was objected to by CLF and remains under review by the EPA.

1313(d)(4)(B), (c)(2)(A).[2] Upon review, the EPA has a non-discretionary duty to either approve or disapprove the revisions. *See id.* § 1313(c)(3). In reviewing the revised water quality standards, the EPA must consider, among other things, "whether the state has adopted criteria that protect the designated water uses" and "[w]hether the State has followed its legal procedures for revising or adopting standards." 40 C.F.R. § 131.5. If the EPA approves of the revised standards, the EPA must notify the state of its approval within 60 days. *See* 33 U.S.C. § 1313(c)(3). Conversely, if the EPA determines that the revised standards are not consistent with the requirements of the CWA, the EPA must notify the state of the changes required to correct the inconsistency within 90 days. *See id.* If the state fails to adopt such changes, the EPA must "promptly" promulgate new standards consistent with the CWA. *See id.* § 1313(c)(4).

Maine's Water Quality Standards

Pursuant to section 303(c) of the CWA, *id.* § 1313(c), Maine has established four classes of water quality standards for the state's freshwater rivers, ranging from "Class AA" waters to "Class C" waters.[3] *See* 38 M.R.S.A. § 465. Larger waterbodies are segmented and may contain multiple classifications. Additionally, Maine has enacted an antidegradation policy mandating that "[e]xisting in-stream water uses and the level of water quality necessary to protect those existing uses must be maintained and protected." *Id.* § 466(12).

II. Factual Background

The St. Croix River system is an international waterbody forming, in part, the boundary between the State of Maine and New Brunswick, Canada. Alewives, an anadromous species,[4] are native to the St. Croix River and play an important ecological role in both freshwater and marine food chains and nutrient cycles. *See* Richard Dill et al., Int'l Joint Comm'n, *An Adaptive Plan for Managing Alewife in the St. Croix River Watershed, Maine and New Brunswick* 1 (2010). Although dams and water pollution have had a deleterious effect on the St. Croix alewife population since the 1860s, fish passage facilities[5] and improved water quality in the 1980s led to a rapid increase in alewife spawning populations, with over 2.6 million fish returning in 1987. *See id.* at 1-2.

The resurgence in alewife populations coincided with a period of declining smallmouth bass populations—a non-native species—within the St. Croix watershed. *See id.* at 2. With little scientific data, some parties claimed that the decline in the population of the non-native

---

[2] *See also* EPA Water Quality Handbook § 4.4.2 (stating that "[n]o activity is allowable under the anti-degradation policy which would partially or completely eliminate any existing use whether or not that use is designated in a State's water quality standards.").

[3] Additionally, Maine has established three classes for marine and estuarine waters, 38 M.R.S.A. § 465-B; two classes for groundwater, *id.* § 465-C; and one class for lakes and ponds, *id.* § 465-A.

[4] An anadromous species is one that lives in saltwater but spawns in freshwater.

[5] Prior to 1980, inadequate fish passage at the Milltown Dam—the first dam on the St. Croix River—effectively prevented alewives from migrating upstream. In 1980, a new fishway was constructed at Milltown and "coupled with state of the art fishways constructed at the Woodland and Grand Falls Dams [the next two dams on the River] allowed alewives unimpeded access to nearly all the headwaters of the St. Croix." Lewis N. Flagg, *Historical and Current Distribution and Abundance of the Anadromous Alewife (Alosa pseudoharengus) in the St. Croix River* 1 (2007).

smallmouth bass was tied to the restoration of the native population of alewives. That claim has since been proven to be without any merit. *See id.* Nonetheless, in response to such claims, the Maine Legislature passed a bill in 1995, 12 M.R.S.A. § 6134, with the explicit purpose of blocking alewife passage at the Woodland Dam and Grand Falls Dam on the St. Croix.[6] *See id.* The bill effectively eliminated access to alewife spawning habitat in the St. Croix watershed, and, as a direct and foreseeable result of the legislation, there was a complete collapse of the St. Croix alewife stock.[7] *See* Dill et al., *supra*, at 2.

After a study on the dynamics between smallmouth bass and alewife populations showed no impacts of the latter on the health of the former,[8] the Maine Legislature amended section 6134 in 2008 to allow passage at the Woodland Dam. *See* FB Envtl., Int'l Joint Comm'n, *St. Croix River: State of the Watershed Report* 18 (2008). However, passage at the Woodland Dam restores only 2 percent of available habitat for alewives. *See id.* Accordingly, alewives have been, and continue to be, prevented from accessing 98 percent of their natural habitat in the St. Croix River above the Grand Falls Dam. *See* Dill et al., *supra*, at 2.

III. The Legislation Blocking Alewife Passage on the St. Croix River Represents a *De Facto* Change in Maine's Water Quality Standards

Under Maine's water quality standards, the St. Croix River above the Grand Falls Dam is classified as "Class A" water.[9] By enacting section 6134 in 1995, and amending the statute in 2008, the Maine Legislature effectively changed the water quality standards for the segment of the St. Croix River above the Grand Falls Dam, making it impossible for that section of the St. Croix to meet the "Class A" water quality standards.

Maine's "Class A" water quality standards mandate both that "[t]he habitat be characterized as natural" and that "[t]he aquatic life . . . shall be as naturally occurs." 38 M.R.S.A. § 465(2).

"Natural" "means living in, or as if in, a state of nature not measurably affected by human activity." *Id.* § 466(9). "As naturally occurs" "means conditions with essentially the same physical, chemical and biological characteristics as found in situations with similar habitats free of measurable effects of human activity." *Id.* § 466(2). In contrast, Class B waters must only be "unimpaired," which means "without a diminished capacity to support aquatic life." *Id.* §§ 465(3)(A), 466(11). The alewife is a native anadromous species to the St. Croix River, requiring habitat that allows for both upstream and downstream migration. The portion of the St. Croix River above the Grand Falls Dam is designated Class A, *id.* § 467(13)(A)(1), and is unarguably

---

[6] In a complaint filed against the State of Maine officials charged with implementing that statute, a group of plaintiffs have alleged that the statute violates the Clean Water Act and thus violates the Supremacy Clause. *See* Friends of Merrymeeting Bay v. Olsen, No. 1:11-cv-00167 (D. Me. filed Apr. 22, 2011). By filing this NOI, CLF takes no position on the merits of that claim nor can or should this NOI be a consideration in determining the merits of the claim.

[7] The number of alewives returning to the St. Croix River declined from 2.6 million in 1987 to 900 in 2002. *See* Dill et al., *supra*, at 2.

[8] The study found that alewives posed no negative effects on St. Croix smallmouth bass populations. *See* Dill et al., *supra*, at 3.

[9] The impounded waters immediately above the Grand Falls Dam are classified as Class GPA; however, the free-flowing waters above the impoundment are classified as "Class A." *See* 38 M.R.S.A. § 467(13).

the natural habitat for that native fish. Thus, by passing legislation explicitly aimed at preventing a naturally occurring species—alewives—from accessing 98 percent of its natural habitat in the St. Croix River above the Grand Falls Dam, the Maine Legislature intentionally and effectively changed the water quality standards for that section of the St. Croix to Class B – that is, it still has the capacity to support alewives but because of the measurable effects of human activity (a dam with blocked fish passage) alewives cannot naturally access that habitat. Likewise, by blocking alewife migration to and from the waters above Grand Falls Dam, the Maine Legislature is altering the naturally occurring, physical characteristics of the St. Croix River, also a fundamental change to the water quality standards. Consequently, the culmination of the 1995 legislation and the subsequent 2008 amendment is a *de facto* change in Maine's water quality standards. *See Miccosukee Tribe of Indians of Fla. v. United States*, No. 95-0533-CIV-DAVIS, 1998 WL 1805539, at *16 (S.D. Fla. Sept. 14, 1998) (finding that a Florida law that created an exemption from state water quality standards created a *de facto* change in water quality standards); *Miccosukee Tribe of Indians of Fla. v. United States*, No. 04-21448-CIV, 2008 WL 2967654, at *12 (S.D. Fla. July 29, 2008).

IV. The EPA Has a Non-Discretionary Duty to Review the Changes to Maine's Water Quality Standards

A State is authorized to seek changes to the water quality standards for its waterbodies. *See* 33 U.S.C. § 1313(c)(2)(A). Section 303(c)(2)(A) of the CWA requires that *any* changes or revisions to a State's water quality standards be submitted to the EPA for review and approval or disapproval. *See id.* If a State wishes to remove a designated use or establish sub-categories of a use requiring less stringent criteria, a State may do so provided it conducts a use attainability analysis (UAA) and seeks EPA approval. *See* 40 C.F.R. § 131.10(j); *FPL Energy Me. Hydro LLC v. Dept. of Envtl. Prot.*, 926 A.2d 1197, 1204 (Me. 2007) (Maine could not apply a less stringent standard for hydropower impoundments than the EPA-approved Class C standard without conducting a UAA and obtaining EPA approval).[10]

The EPA's duty to review revised water quality standards is non-discretionary. *See Fla. Pub. Interest Research Group Citizen Lobby, Inc. v. EPA*, 386 F.3d 1070, 1080 (11th Cir. 2004); *see also Miccosukee Tribe of Indians of Fla. v. United States*, 105 F.3d 599, 602 (11th Cir. 1997). To that end, a state's failure to submit to EPA revisions to water quality standards "cannot circumvent the purposes of the CWA" or the obligation of EPA to review those revisions. *Id.* at 602. Thus, "[e]ven if a state fails to submit new or revised standards, a change in state water quality standards could invoke the mandatory duty imposed on the [EPA] to review new or revised standards." *Id.*; *see also Fla. Pub. Interest*, 386 F.3d at 1089. In determining whether such a duty applies, it is the *effect* of the action in question that determines whether the standards have changed. *See Miccosukee Tribe of Indians of Fla.*, 105 F.3d at 603.

---

[10] EPA may not approve the removal of a designated use or the application of less stringent criteria unless the State demonstrates that "attaining the designated use is not feasible" as a result of one or more of six factors. *See* 40 C.F.R. § 131.10(g)(1)–(6). If EPA were to require Maine to conduct a UAA for the St. Croix, the State would be unable to show that the Class A standards ("aquatic life…shall be as naturally occurs") are unattainable. By unblocking the Grand Falls Dam and allowing for fish passage, the designated uses of the River would be attained.

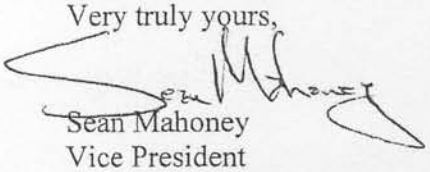
Similarly, a state's failure to follow the mandated procedures for amending its water quality standards does not absolve the EPA of its non-discretionary duty to review those revisions. *See Fla. Pub. Interest*, 386 F.3d at 1089. Rather, the state's failure to follow proper procedure is one of the very factors that the EPA must consider in reviewing the revised standards. *See* 40 C.F.R. § 131.5(a)(3) (requiring the EPA to review "[w]hether the State has followed its legal procedures for revising or adopting standards"); *see also Fla. Pub. Interest*, 386 F.3d at 1089-90 (finding the district court, in determining that a Florida rule did not change water quality standards, improperly relied on the fact that the state did not follow the proper procedures). Thus, the fact that the change to the St. Croix River's water quality standard was not based on a UAA nor effectuated by a change to the statute setting water quality standards but a separate statute is of no matter. What matters is that a change to the St. Croix River's water quality standard was made and has not been reviewed for approval or disapproval by EPA.

The legislation at issue has the effect of changing Maine's water quality standards because it explicitly aims to extirpate a natural species from a "Class A" water, and it does so by altering the natural, physical and biological characteristics of the water (i.e., blocking migratory passage). Thus, the EPA has a non-discretionary duty to disapprove these significant changes to the water quality standards for the St. Croix River. Failure to do so allows Maine to circumvent its responsibilities under the CWA and prevent EPA from fulfilling its legal obligations. Moreover, the fact that Maine changed the St. Croix River's water quality standards by codifying the revisions under a different title of the Maine Code is a strong indication that the Maine legislature was well aware that it would not be able to achieve EPA approval of the change under the CWA. Finally, even if the State were to follow proper procedure to effectuate the change it made in 1995 and reaffirmed in 2008 by conducting a UAA, there is no conceivable manner in which a UAA would meet the criteria necessary to support such a change.

V. Conclusion

The EPA has a non-discretionary duty to review and disapprove of Maine's revised water quality standards for the St. Croix River under section 303(c) of the CWA. Unless EPA performs that duty and takes steps to remedy this ongoing violation of the CWA, CLF intends to file suit at the close of the 60-day notice period pursuant to 33 U.S.C. § 1365(a) and will seek appropriate injunctive and declaratory relief, as well as a recovery of attorney fees and litigation costs as provided under the Act.

Very truly yours,



Sean Mahoney
Vice President
Conservation Law Foundation
47 Portland Street
Portland, ME 04101

EXHIBIT B

Historical and Current Distribution and Abundance of the Anadromous Alewife (*Alosa pseudoharengus)* in the St Croix River

A Report to the State of Maine
Atlantic Salmon Commission
161 Capitol Street
172 State House Station, Augusta, Maine 04333-0172

- Lewis N. Flagg
May 30, 2007

Distribution and Abundance of Anadromous Alewife (*Alosa pseudoharengus*) in the St Croix River

Introduction: The St Croix River is the largest river between the Penobscot and St John watersheds. The river drains an area of 1635 square miles of which approximately 625 square miles of the river's basin is in New Brunswick and 1010 square miles is in Maine. The east branch of the St Croix forms the easterly boundary of the Atlantic seaboard between the US and Canada. Historically, the St Croix river was noted for its large runs of anadromous fish, particularly Atlantic salmon, American shad, and alewife. Due to the international boundary formed by the St Croix river, the freshwater and anadromous fish resources of the main stem and East Branch are interjurisdictional resources under the joint management of state and federal US and provincial and federal Canadian fishery agencies (St Croix River Steering Committee). The St Croix River Steering Committee was established for the purpose of seeking mutual agreement on a course of action to rebuild the depleted fish stocks and for management strategies as the fisheries develop. A long term management plan was developed by the Steering Committee in 1988 and a subsequent five year management plan was developed in 1993. Due to continued fishway closures at Woodland and Grand Falls since 1995, the 1993 plan was never fully implemented.

Overview: The upstream migration limit for anadromous species, particularly alewives (Gaspereaux) has been a center of controversy since the 1980's when anadromous alewives were perceived to be the cause of substantial declines in smallmouth bass in the upper St Croix river. Prior to 1980, an old, inefficient, and limited capacity fishway at Milltown (constructed in 1960) allowed only limited passage of anadromous fish. Construction of a new fishway at Milltown in 1980, coupled with state of the art fishways constructed in 1964 at Woodland and Grand Falls, allowed alewives virtually unimpeded access nearly to the headwaters of the St Croix. Limited numbers of alewives had ascended the river above Woodland and Grand Falls as early as 1965 because juvenile alewives were observed passing into the turbines at the Grand Falls powerhouse in the summer of that year by Fletcher (1965). By the mid to late 1980's, smallmouth bass in Spednic Lake had apparently declined substantially. Following complaints of poor smallmouth bass fishing from local guides and sporting camps on Spednic Lake, the MDIF&W undertook a cooperative study with the New Brunswick DNR. After 10 years of investigative work at Spednic lake, that study concluded that the large influx from a natural run of alewives through the Vanceboro Dam fishway, coupled with a lake drawdown of 9-14 feet, resulted in the young bass fry becoming unprotected by the rocky shoreline habitat and forced to compete for food and habitat with young perch and alewife fry. The combination of the loss of protective habitat, through water drawdown, coupled with the excessive competition from other fish fry, was believed to have caused poor bass fry survival over several successive years. In response to the smallmouth bass decline, the St Croix River Steering committee agreed to block the Vanceboro fishway during the alewife run and requested that Georgia Pacific Company (Vanceboro Dam owner) revise its water management plan on the St Croix watershed to

minimize the impacts of water drawdown on young bass. The Vanceboro fishway has been closed to alewife passage since 1988 with the exception of some limited passage in 1991 when the fishway was not closed soon enough to prevent some limited alewife escapement. In spite of this proactive effort, in 1995 the Maine Legislature passed L.D. 520, An Act to Stop the Alewives Restoration Program on the St Croix River, which resulted in unilateral closure of the Woodland and Grand falls fishways to the passage of alewives. This action, which was opposed by the fishery agencies of the state of Maine and Canada, caused the alewife run to decline from 2,600,000 in 1987 to 900 fish in 2002. The Milltown Dam, owned by the New Brunswick Electric Power Commission and with a fishway and powerhouse located on the Canadian side of the river, was not subject to the Maine Legislature's action. Alewives have continued to be released above the Milltown dam up to the present time. Because of recent dramatic declines in adult alewife returns, DFO Canada has been trucking alewives from the Milltown fishway to the Woodland impoundment since 2001. This has caused the alewife run to rebound from 900 adult returns in 2002 to about 12,000 in 2006.

Smallmouth bass sportfishing guides and upriver camp owners allege that anadromous alewives historically had no access to the waters of the upper St Croix because of a natural falls (Salmon Falls) located at the head of tide. It is the purpose of this report to examine the history of early settlement of the area, archaeological information and historical fisheries records to determine the distribution and relative abundance of anadromous alewives in the St Croix watershed.

Historical Status of Anadromous Fish Runs.

There are numerous references to the abundance of anadromous salmon, shad and alewife in the St Croix river. The first report (1867) of the Commissioners of Fisheries of the state of Maine had this to say about the St Croix River: "The St Croix was formerly very productive of salmon, shad, and alewives. Perley (1852), in his report of the fisheries of New Brunswick, states that the average catch of salmon at Salmon Falls, in Calais, was 18,000 annually. Gaspareaux, (alewives) came in such numbers that it supposed they could never be destroyed. The number of shad were almost incredible. The fisheries did not diminish up to 1825. Until that time there were fishways; but in that year the Union dam was built without a fishway, and the fisheries instantly fell off. We have the testimony of Mr. Ferdinand Tinker of Milltown, to the abundance of fish up to 1825. Perley says the whole number of salmon taken in 1851 was 200. Since that time they have remained the same until 1866, when 300 were caught. In 1867 there was a still further increase. Mr Treat of Eastport attributes this late increase of salmon to the influence of Porter's stream, a tributary on the New Brunswick side of the river, to which they sometimes have access at the breeding season."

Atkins (1887) reported: "The St Croix is remarkable, even among the rivers of Maine, for the great extent of the lake surface among its tributaries. **These lakes afford breeding ground for great numbers of alewives,** and, in the main river and its branches, here the salmon and there the shad found their favorite haunts. The exact limit of the upward migration of all these species is very naturally unknown with any degree of exactness, the entire upper portions of the basin being wilderness till long after the occupation of the lower banks and the erection of artificial obstructions**; but the fact of their existence in great numbers in the river shows they must have passed the only serious obstacle to their ascent, the natural fall at Salmon Falls near the head of tide**

and found their breeding ground in the upper waters. From the early settlement of the country until 1825, there was annually a great abundance of salmon shad and alewives. .Vessels from Rhode Island, from 100 to 150 tons berthen, followed the fishing business on the river and were never known to leave without full cargoes. There were also several seines belonging to the inhabitants, which were worked in the tideway of the river, the owners of which put up annually 1,500 to 2,000 barrels of alewives for exportation. At the same time shad were caught in great numbers, often more than a hundred of them being caught in a small net in a single night."

The St Croix River once supported large runs of anadromous species that ascended the river system nearly to its headwaters (Havey 1963). Keith Havey was the IF&W Regional fishery biologist for eastern Maine from the early 1950' to the 1980's.

In the late 1700's, mill dams were built throughout the lower St Croix watershed, impounding tidal areas, streams, and sections of the mainstem between Baring/Upper Mills and Milltown. Fletcher (1982) reported that the early dams only partially blocked the river. They were built out from either shore obliquely upstream and did not meet at the center of the river, the opening serving as fish passage and as a vent for excess flows. While water ran around the open end of these dams, the retained water served as a log holding pond and insured a head of water to power the mills on shore. Fletcher also reported that the natural ledge barrier at Salmon Falls and the rapids at Milltown may have been a barrier to the anadromous fish runs at various water stages, particularly at low water flows. He further acknowledges that the construction of the Union Dam in 1825 in Calais brought the taking of great quantities of salmon, shad, and gaspereau (alewives) to an end. This tidewater structure had no fishway. It is quite apparent that the lack of a fishway at the Union Dam virtually destroyed the anadromous fish runs of the St Croix. Fletcher surmised that the rapids immediately upstream of the Milltown dam and the rapids at Baring would be difficult for fish to pass at many water levels **but at high flows, migratory fish would probably pass these areas successfully.**

Alewife Life History and Fisheries

The Maine Commissioners of Fisheries report of 1867 makes the following observations about alewives: " The fishermen distinguish three separate schools or runs of different sizes of fish. The main body does not appear until late in May or in some rivers in June. Of the first run on the East Machias, 370 fill a barrel, of the second run, 400, of the third run, 600." **(It takes 120 alewives to fill a bushel, making a barrel of alewives equivalent to three bushels. If 2000 barrels were put up annually, this represents a minimum of 720,000 individual fish).**

Collette and MacPhee (2002) Fishes of the Gulf of Maine 3rd edition provides the following description of alewife spawning habitat: "Alewives usually spawn in quiet waters of coves and ponds, including those behind barrier beaches (if there are openings to the sea, natural or artificial) and in sluggish sections of streams above the head of tide (Smith 1907; Belding 1921; Bigelow and Schroeder 1953; Marcy 1976B). Where further upstream migration is barred by dams, alewife will spawn in shore-bank eddies or deep pools (Loesch and Lund 1977).

During their spawning migration, alewife are much more successful than American shad in navigating fishways of suitable design. They do not generally jump over obstructions although they easily negotiate white water in rapids and fishways. Negotiating swift water apparently does not stress them because increases in blood lactic

acid levels were not very great when tested during spawning runs in a fishway in the Gaspereaux river, N.S. (Dominy 1973).
Adult alewives move up our rivers in May and June on spawning runs. They spawn mostly in lakes, but may choose slow-moving streams. The eggs are broadcast and there is no parental care. The young hatch in just a few days and spend part of their first summer in the waters in which they hatched, moving down to the sea between July and December of that first year. After three to five years they return to their home rivers to produce their own young. (Havey 1963)

Most alewife are believed to return to spawn in their stream of origin (Bigelow and Schroeder 1953; Loesch 1987). This theory is supported by meristic data (Messieh 1977), by establishment or reestablishment of spawning runs by stocking gravid adults (Belding 1920, 1921; Bigelow and Schroeder 1953;Havey 1961) and by olfaction experiments (Thunberg 1971).

Alewife production in Maine is based on a production potential of 117.5 –235 adult returns per surface acre of spawning habitat. These very conservative production figures are derived as follows: Long term annual yield of alewives from the Damariscotta and St George Rivers (early 1950's to early 1980's) was 190 and 270 pounds per acre respectively. These figures do not include spawning escapement which is assumed to be 15%, based on a one-day weekly closed period which was in effect at that time. More recently, harvests of alewives have dropped dramatically to between 50 to 100 pounds per acre. The average alewife weighs about 0.5 pounds, which translates to 100-200 adults per acre yield. If 15% (a minimal % since current weekly closures have been increased from 24 to 72 hours) is added to this yield to account for spawning escapement, the production potential is 117.5 –235 returning adult fish per acre of spawning habitat. The following table shows the distribution of habitat and potential alewife production in the St Croix River drainage.(Acreages obtained from Five Year (1993-1997) Operational plan for the development and Management of the Diadromous Fishes of the St Croix River.)

Table 1
St Croix River Alewife Habitat/Production Above Milltown

River Reach	Acreage	% of Total Habitat	Production @117.5	Production @ 235
Milltowm to Woodland	131	0.1	15392	30,784
Woodland to Grand Falls	1174	1.1	137,945	275,890
Grand Falls Flowage	27,142	27.3	3,189,185	6,378,370
Spednic Lake and above	36,209	36.5	4,254,557	8,509,114
West Grand lake and above	34,549	34.8	4,059,507	8,119,015
TOTAL	99,205	100.0	11,783,486	23,566,974

Alewife habitat below Woodland represents only 0.1 % of the production potential of the drainage. There is virtually no alewife spawning habitat below the Milltown Dam (Lee Sochasky, personal communication), certainly no where near the habitat that exists between Milltown and Woodland. If we accept the theory that alewives never ascended above Salmon Falls where was the habitat that produced harvests in excess of 700,000 adults per year prior to 1825? Even the

area from Salmon Falls (Milltown) to Woodland only provides a potential production of 15,000 fish. Moreover, the number returning in recent years as a result of stocking the Woodland impoundment is only about 12,000 fish annually). If production is doubled to replicate alewife yields in the 1950's-1980's, the production is only 30,000 fish. Therefore alewives would have to have ascended above Grand Falls to produce runs of the magnitude mentioned in historical literature. Further evidence of alewife migration above Salmon Falls is provided by the following:

Petition of Joseph Whitney et. al. for Removal of Obstructions in the St Croix River for the Passage of Fish, December 3, 1822

"To the Honorable Senate & House of representatives of the state of Maine:
We the undersigned, citizens of said state, respectfully represent that previous to existing obstructions, by mills and mill dams, on the St Croix or Schoodic River, great quantities of Salmon, Shad, and Alewives annually passed up and returned down said river to the great benefit and advantage of the community generally; and in an especial manner of the new settlements in the eastern part of the state— That said obstructions have rendered it almost impossible for the Shad and Alewives to pass above the town of Calais; **whereas they used to pass from eighty to an hundred miles above; and they are now almost totally excluded from said River.**

That it is confidently believed that if suitable fish ways should be provided and also suitable regulations for the taking of fish on said river, it would, as formerly, be abundantly supplied with fish and all the privileges and advantages of the proprietors of the mills and mill dams on said River remain unimpaired--

Wherefore, we pray, that such fishways and such regulations concerning the taking of fish on so much of said river and its branches as be within this state as may be deemed necessary to restore to its citizens their ancient privileges in this respect, may be provided by the Honourable House of representatives and as in duty bound we will ever pray. Joseph Whitney, Anson G. Chandler, Enoch Darling, William Smith, Andrew Tracy, Samuel Perkins, James Stuart, and John Harvey.

Not only did the petitioners believe that alewives ascended the river above Salmon Falls before the dams were built, but they also acknowledged that the alewife, shad, and salmon runs were depleted. as a result of the dams with no fish passages. **If alewives never went above Salmon Falls, why did the run decline coincident with dam construction without fish passages?**

Table 2
Adult Alewife Returns at Milltown 1981-2006

Year	Returns at Milltown	Significant events
1981	169,620	New pool & weir fishway at Milltown
1982	233,102	
1983	151,952	
1984	152,900	
1985	368,900	
1986	1,984,720	
1987	2,624,700	
1988	2,590,750	Spednic Fishway closed to alewife
1989	1,164,860	
1990	1,531,250	Grand falls Fishway blocked
1991	586,910	Limited alewife escapes into Spednic
1992	203,750	Limited escapes above Grand falls
1993	297,720	Grand falls Fishway blocked
1994	378,330	Grand falls Fishway blocked
1995	223,133	Woodland & Grand Falls Fwys blocked
1996	645,978	
1997	225,521	
1998	173,318	
1999	25,327	
2000	8,569	
2001	5,202	Woodland headpond stocked
2002	900	Woodland headpond stocked
2003	7,901	Woodland headpond stocked
2004	1,299	Woodland headpond stocked
2005	11,632	Woodland headpond stocked
2006	11,829	Woodland headpond stocked

Table 2 represents recent counts of adult alewife returns to the Milltown fishway. The majority of adults in the spawning run return after four to five years at sea. The 1988 closure of the Spednic lake fishway reduced the adult return from 2,590,750 in 1988 to 203,750 in 1992; a ten fold reduction in the run over a span of four years. The 1990 closure of the Grand falls fishway resulted in a five fold reduction in adult returns in 1994. The 1995 closure of the Woodland and Grand falls fishways in 1995 reduced the adult return from 223,133 in 1995 to 25,327 in 1999; an additional ten fold reduction over a four year period. The run further

diminished to 900 returns in 2002 due to lack of access to alewife spawning habitat. Adult returns have increased only because DFO has been stocking the 1174 acre Woodland impoundment since 2001. **These data demonstrate conclusively that there is little habitat for alewife production below Salmon Falls and therefore alewives had to ascend the river above Salmon Falls and Grand falls to produce the historically abundant alewife run in the St Croix river.**

Recent information received from Dr Arthur Spiess, Senior Archaeologist with the Maine Historic Preservation Commission, further demonstrates that alewives have been present in the upper portion of the St Croix watershed for at least 4000 plus or minus 100 years. (See attachment A letter to Dr Spiess from Lewis Flagg and Attachment B response from Dr Spiess.). Following is a summary of Dr Spiess' report:

"The Mud Lake stream site (BkDw 5) is located at the confluence of Mud lake Stream and Spednic Lake on the New Brunswick side. Excavated in 1983/4, the **archaeologists recovered 17 alewife bones** (representing multiple individual alewives-Dr Spiess personal communication 25May 07) from a hearth and/or a garbage pit (Figure 21). Charcoal from the pit was radiocarbon dated to 4000 plus or minus 100 years. **As for specific identifications of animal bone, there are a few specialists who are quite good at the task, and we (I am included) use comparative collections as much as possible. When a bone is identified as "alewife" it is specifically differentiated from the larger shad on size.** Native Americans of eastern Maine and western New Brunswick moved seasonally to be near food sources. The food animal bone, plant and shellfish remains (with one exception) from their sites seems appropriate to the local ecology. They did maintain long-distance trade networks, trading rocks, furs, and other high-value commodities. We do not have any evidence of trade in food stuffs. The one exception to the "food animal bone locally caught rule seems to be movement of bone that was used for tools and/or attached to pelts (such as in the form of medicine bags). the only fish bone that was used as a tool, and therefore moved across some distance, was swordfish sword. **In short, we conclude that food was gathered within perhaps ½ day travel maximum, and often much less, from a camp site.** (½ day travel by canoe is estimated by archaeologists to be no more than 10 miles. The distance from Calais or Meddybemps Lake to the Mud Lake site is between 60 and 65 miles so there is virtually no likelihood that alewives were carried to the Mud lake site from other known alewife sites.)**We know from ethnographic records that camps were often made at good fishing locations, and the archeological record seems to support this pattern. In summary, the Mud Lake Stream site provided evidence of alewife above the head of tide on the St Croix 4000 years ago."**

It should be noted that Mud Lake Falls was reported by Mike Smith, IF&W biologist, to be impassable to anadromous alewives. Therefore, this was a logical place for native Americans to harvest alewives since they would naturally be backed up below the falls as is the case today when alewives encounter artificial and natural obstructions to passage.

Summary and Conclusions

Therefore, I conclude that anadromous alewives historically ascended above Salmon Falls and Grand Falls based on the following evidence:

1. There is not enough habitat below Salmon Falls and Grand falls to produce the historically large runs of alewives that were commercially exploited in the lower river. (See Table 1.)
2. Historical reports link the decline of alewives, shad, and salmon to the construction of dams at Salmon Falls and other sites on the lower river. If alewives never ascended the river above Salmon Falls, why did the alewife run decline dramatically coincident with dam construction on the lower river? I conclude that alewives did ascend the river above Salmon Falls and the decline in abundance of alewives, along with salmon and shad, was directly related to loss of access to upriver spawning and nursery habitat
3. Since 1990 and 1995, when alewives were denied access to habitat above Grand Falls and Woodland respectively, adult returns declined dramatically from 2,600,000 adults to 900 and has shown no appreciable recovery up to the present. The habitat below Grand falls (Milltown and Woodland flowages) is producing a run of only about 12,000 adult alewives or approximately the number projected by DMR's low range estimate in Table 1 for the river below Woodland.
4. Archeological findings at the Mud Lake Stream site provide evidence of alewife above head of tide on the St Croix 4000 years ago. This was long before any fish passage modifications may have been made at Salmon Falls by European colonists. The Mud Lake site is 65 miles upstream of head of tide and the same distance from Meddybemps Lake and more than 65 miles upstream of the Devil's Head site in the St Croix estuary, other known sites of alewife bones. These sites are much more than a ½ day travel maximum between where food was harvested and where it was consumed by native Americans. Therefore, I conclude that the alewives at the Mud Lake stream site were caught in Mud Lake stream or the immediate vicinity and therefore successfully passed upstream above Salmon Falls and Grand Falls.

Literature Cited

Anon. 1988. Long-term management plan for the diadromous fisheries of the St Croix River. Can. Ms Rep.Fish. Aquat. Sci. No.1969, vii + 68 p.

Anon. 1993. Five Year (1993-1997) Operational Plan for the Development and Management of the Diadromous Fishes of the St Croix River.

Atkins, Charles G. 1889. The River Fisheries of Maine. In Fisheries and Fishery Industries of the United States, 1887, Sec V, Vol. 1 pt. XII, pp 637-728.

Bigelow, Henry B. and William C. Schroeder 1953. Fishes of the Gulf of Maine. 2nd Edition

Belding,D.L. 1920. The Preservation of the Alewife. Trans.Am.Fish.Soc. 49:92-

Belding,D.L. 1921. A Report on the Alewife Fisheries of Massachusetts. Div.Fish.Game, Dept.Cons.Mass Contrib.No 11. 135 pp.

Collette, Bruce B. and Grace Klein-MacPhee 2002. Bigelow and Schroeder's Fishes of the Gulf of Maine 3rd edition 747 pp.

Commissioners of Fisheries. 1867. First Report of the Commissioners of fisheries of the state of Maine.

Dominy,C.L. 1973. Effects of Entrance Pool Weir Elevation and fish density on passage of alewives in a pool and weir fishway. Trans.Am.Fish.Soc.102:398-404.

Fletcher, J.S. 1965. Ltr from J. Fletcher to Larry Decker, IF&W Chief Engineer concerning St Croix fishways. Sept 24, 1965.

Fletcher, J.S. and A.L. Meister 1982. The St Croix River. An Atlantic Salmon River Management Report. State of Maine Atlantic Salmon Commission, Bangor, ME

Havey, K.A. 1961. Restoration of anadromous alewives at Long Pond, Maine. Trans.Am.Fish.Soc. 90:281-286.

Havey, K.A. 1963. St Croix River Fish Management and Restoration. Maine Department of Inland Fisheries & Game and Atlantic salmon Commission Machias, Maine.30p

Loesch,J.G. 1987 Overview of life history aspects of anadromous alewife and blueback herring in freshwater habitats. Common Strategies of Anadromous and Catadromous Fishes. Am. Fish.Soc.Symp.1:89-103.

Loesch, J.G. and W.A. Lund 1977 A Contribution to the life history of the blueback herring. Trans. Am. Fish. Soc.106:583-589.

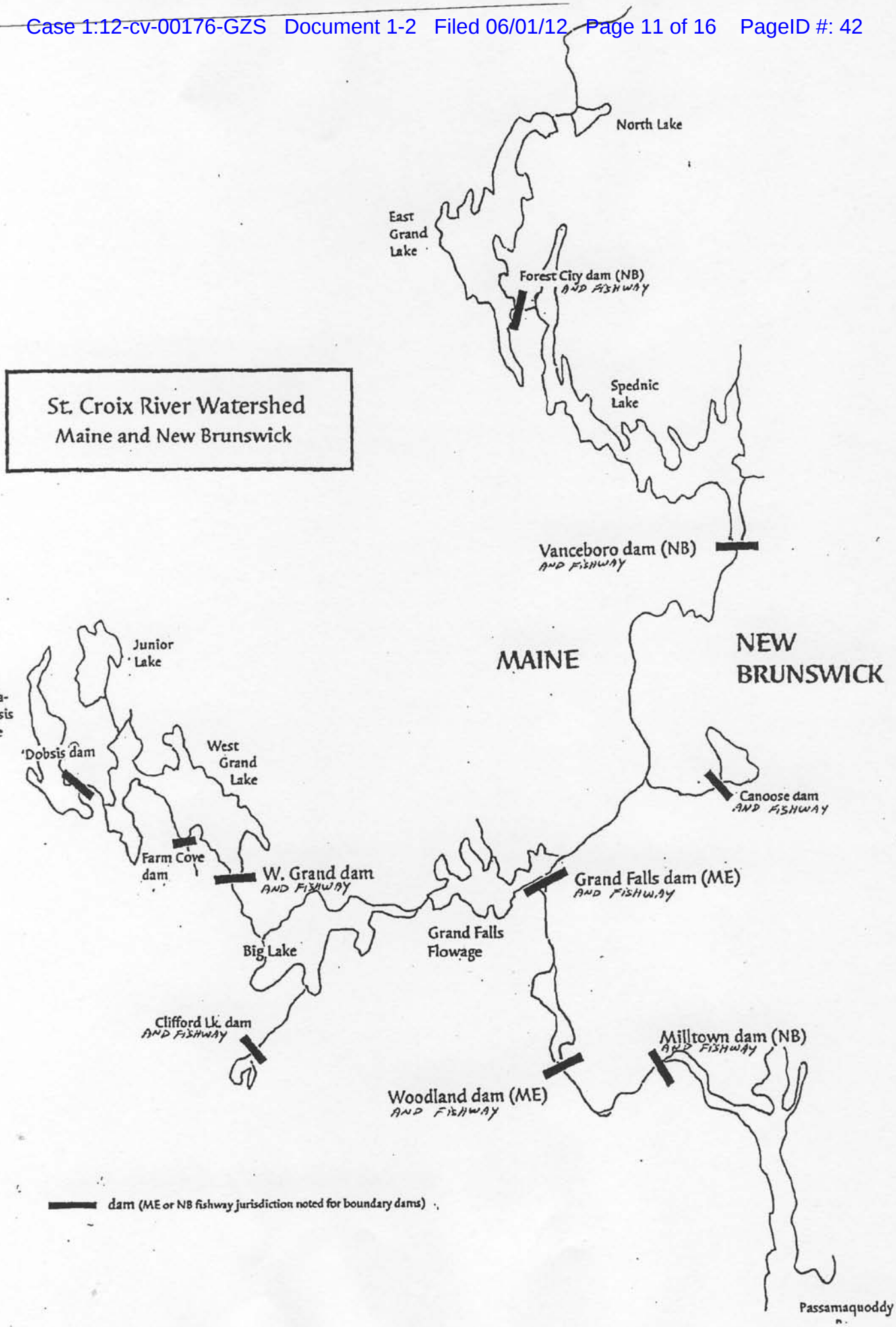
Marcy, B.C. Jr. 1976B. Planktonic Fish Eggs and Larvae of the lower CT. river and effects of the CT Yankee Plant including entrainment . Am.Fish.Soc. Monogram No: 1:115-139.

Messieh,S.N. 1977 Population structure and biology of alewives (Alosa pseudoharengus) and blueback herring (Alosa aestivalis) in the St John River New Brunswick. Environ.Biol.Fishes 2:195-210.

Perley, M.H. 1852. Reports on the sea and rivers fisheries of New Brunswick. Repts. to the Legislatures of 1849, 1850, and 1851. J. Simpson, Printer to the Queen's Most Excellent Majesty, Fredericton, N.B. 2nd edition, 294 p.

Thunberg,B.E. 1971.Olfaction in parent stream selection by the alewife (Alosa pseudoharengus). Anim.Beh. 19:217-225.

Smith,H.M. 1907. The Fishes of North Carolina. N.C. Geol.Econ.Surv. 2:1-453.


St. Croix River Watershed
Maine and New Brunswick
North Lake
East Grand Lake
Forest City dam (NB)
AND FISHWAY
Spednic Lake
Vanceboro dam (NB)
AND FISHWAY
MAINE
NEW BRUNSWICK
Junior Lake
Sysladobsis Lake
Dobsis dam
West Grand Lake
Canoose dam
AND FISHWAY
Farm Cove dam
W. Grand dam
AND FISHWAY
Grand Falls dam (ME)
AND FISHWAY
Grand Falls Flowage
Big Lake
Clifford Lk. dam
AND FISHWAY
Milltown dam (NB)
AND FISHWAY
Woodland dam (ME)
AND FISHWAY
dam (ME or NB fishway jurisdiction noted for boundary dams)
Passamaquoddy

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JOHN ELIAS BALDACCI
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

May 9, 2007

Mr. Lewis N. Flagg
34 Turkey Lane
Winthrop, ME 04364

Dear Mr. Flagg:

I will try to answer your specific questions of May 3 about alewife presence in archaeological sites in and near the St. Croix river within the body of this letter. To start with your last questions first, our office is the repository of a copy of most archaeological reports generated in Maine, and we also have many from our colleagues in New Brunswick. Moreover, it is part of my job to be current in archaeological research that affects the understanding of archaeological sites in the region. Therefore, with reasonable assurance, the summary provided herein is complete, and you do not need to contact any other archaeologists for further data.

The pre-Contact (pre-European Contact, or "prehistoric") Native Americans of eastern Maine and western New Brunswick were hunter-fisher-gatherers, not agriculturalists. They moved seasonally, to be near food sources. The food animal bone, plant and shellfish remains (with one exception) from their sites always seems appropriate to the local ecology. They did maintain long-distance trade networks, trading rocks, furs and other high-value commodities. We do not have any evidence of trade in food stuffs. The one exception to the "food animal bone locally caught" rule seems to be movement of bone that was used for tools and/or attached to pelts (such as in the form of medicine bags). The only fish bone that was used as a tool, and therefore moved across some distance, was swordfish sword.

In short, we conclude that food was gathered within perhaps ½ day travel radius maximum, and often much less, from a camp site. We know from ethnographic records that camps were often made at good fishing locations, and the archaeological record seems to support this pattern.

As for specific identifications of animal bone, there are a few specialists who are quite good at the task, and we (I am included) use comparative collections as much as possible. When a bone is identified as "alewife" it is specifically differentiated from the larger shad on size.

The number of archaeological sites with preserved food animal bone, and thus the amount of data relevant to your question, is rather low, because many sites on the St. Croix above tide, and on the lakes, have been heavily damaged by erosion from water impoundment construction. Many sites on the tidal portions of the St. Croix have been heavily eroded by an uncommonly rapid relative sea level rise over the last few thousand years.

There are, in fact, only three archaeological sites with alewife bone that are relevant to your question, two on the St. Croix and one on the Dennys.

The Mud Lake Stream site (BkDw 5) is located at the confluence of Mud Lake Stream and Spednic Lake on the New Brunswick side. Excavated in 1983/4, the archaeologists recovered 17 alewife bones from a hearth and/or garbage pit (Feature 21). Charcoal from the pit was radiocarbon dated to 4000 ± 100 years.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

JOHN ELIAS BALDACCI
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

The reference is: Michael Deal, 1985, Final Report on the 1983/4 Excavations at the Mud Lake Stream Site (BkDw 5), Southwestern New Brunswick. Manuscripts in Archaeology 15, New Brunswick Historical and Cultural Resources.

The second site relevant to your questions is the Devil's Head site (97.10) on the tip of that landform in Calais. It is composed of multiple seemingly individual "wigwam" areas, with fire hearths and clam shell dump areas, both of which yielded food animal bone. The associated artifacts date from as early as 1500 years to about 1800 A.D. Unidentified fish bone is the most common food animal bone category, and alewife is (by far) the most common bone identified to genus/species. I have enclosed the relevant pages from the report (Spiess and Cranmer 2005). Harvesting alewife was an important subsistence activity at this camp site. They were the most abundant species harvested, but specifying exact numbers is impossible.

The third relevant site is the N'tolonapemk site (site 96.2), at the outlet of Meddybemps Lake, on the Dennys River. This is the most important site so far discovered on an interior lake or river setting in Downeast Maine. The reference is: Michael S. Brigham et al., 2005, The Archaeology of N'tolonapemk (96.02 ME), "Our Ancestor's Place": Phase III Data Recovery at the Eastern Surplus Superfund Site, Meddybemps, Washington County, Maine. Archaeology Research Center, University of Maine at Farmington. Approximately 200 "features" (fire hearths, storage pits, and/or garbage pits) yielded a range of radiocarbon dates (and appropriate artifact) from 8500 years to 550 years. This site covers nearly the entire range of cultural occupation in Maine. Over 70,000 fragments of animal bone from this site were examined, and about 23,000 identified to class (mammal, bird, fish), family or genus/species. Throughout the sequence, the most common genus/species identification is alewife (906 bones), and fish (not further identified) numbers 9781 bones. (Most of those were small fish that could be alewife.) The record of alewife anadramous behavior, reaching Meddybemps Lake on the Dennys River, over 8000 years, is quite clear.

In summary, the Mud Lake Stream site provided evidence of alewife above the head of tide on the St. Croix 4000 years ago, and the Devil's Head site provides evidence of alewife inshore in tidal waters just below Calais sometime between 1500 years ago and 1800 A.D. Site 95.2 at the outlet of Meddybemps Lake provides evidence that alewife harvesting was a major seasonal activity for almost 8000 years at the headwaters of the Dennys River. Unfortunately, no site of the quality of 95.2 has been found on the St. Croix drainage, but we presume that 95.2 can be used as a proxy statement that alewives have been a major anadramous fish presence in the downeast Maine rivers for millennia.

Sincerely,

Dr. Arthur Spiess
Senior Archaeologist

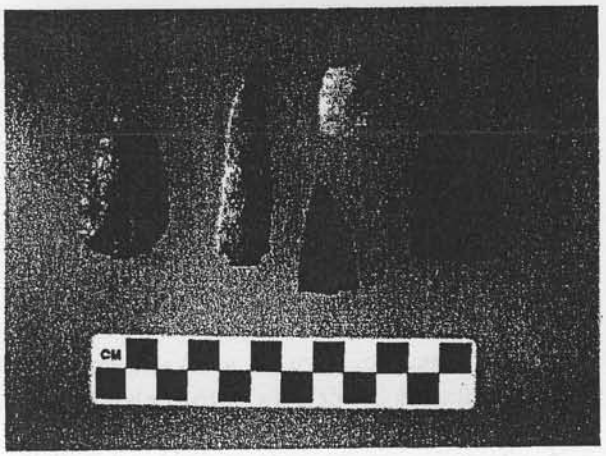
arthur.spiess@maine.gov

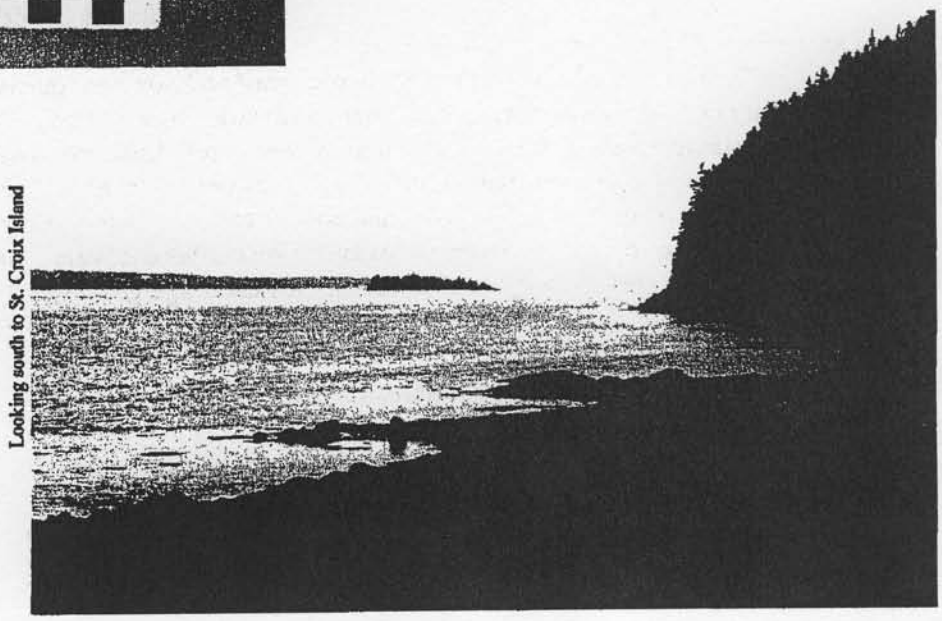
PHONE: (207) 287-2132

FAX: (207) 287-2335

ATTACHMENT "B"

DEVILS HEAD, CALAIS, AND SITE 97.10: ARCHAEOLOGICAL SURVEY FOR THE LAND FOR MAINE'S FUTURE BOARD





Arthur Spiess and Leon Cranmer
Maine Historic Preservation Commission
February, 2005

1600.

Fragments of pearlware ceramic, manufactured from about 1785 to 1840, were recovered in three testpits (tp 19, 20 and 28). Pearlware could, of course, have been in use as "old" camp ware during or after the Civil War, but its presence in three testpits grouped in a 25 m area argues for more than one vessel and breakage/discard during the first half of the 19th century.

As mentioned in the history section, there is no historic indication of Euro-american construction at the site 97.10 area before the 20th century. Therefore, it is likely that these historic period artifacts reflect "camping" activity. Because these historic artifacts are widespread within the site area (T2 tp 5 to tp 20 being about 80% of the length of the site) we conclude that this "camping" occurred as small occupations that can not be easily separated from a similar Ceramic period pattern that preceded them. In the absence of specific evidence of use of this location by groups of Euro-americans, these historic artifacts must indicate continued use of the location by Native Americans through the 17th and 18th centuries. Of course it is likely that these people were Etchemin, or ancestral Passamaquoddy-Maliseet, and (after the political alignment caused by the American Revolution) Passamaquoddy tribal members. This is one of the few archaeological sites in Maine to preserve archaeological evidence of continuing use from the Ceramic period through the 18th century and perhaps into the 19th century.

Faunal Remains

Faunal remains from a shell midden fall into two primary categories: shell and vertebrate bone. The shell in the shell midden deposits at Devil's Head is 99.9% *Mya* (soft shell clam). There are a few moon snail shells (a large univalve).

The vertebrate bone occurs both in unburned and calcined (burned to a chalky white) states. Calcined bone is produced when fresh bone is exposed to a hot fire. The only fire hot enough to produce calcined bone at this site would have been hearth fires, and thus the calcined bone records discard of bone (or animal parts containing bone) directly into the fire. As shown by the bone identifications (Appendix II), the calcined bone at this site is sub-sample of the unburnt bone, with the same range of species represented. Because we did not excavate a large sample of the middens, and because we can not sort the samples into different age groups or "occupations" based on the small samples we do have from the site, the bone sample is summarized as a unit. Thus, we characterize the "Ceramic period" and "Contact period" use of the site as one economic focus, although future work might detect shifts in economic focus over time.

The faunal sample is dominated (in numbers) by small fish bone, which is mostly alewife, with frequent flounder and sculpin. Sturgeon (scute or skin bone) is also common, although we can not directly compare the frequency of sturgeon scute with other fish bones, because sturgeon do not have boney skeletons. The comparative weights indicate that sturgeon were perhaps the second most important fish compared with alewife. Based on this species mix, perhaps fishing was being done with weirs or nets set in the intertidal zone. Three bones of (at least one individual) large cod fish are present, possibly indicating fishing further from shore and/or down the estuary.

The identified mammal bone sample is dominated by moose in both count and weight, with beaver and deer second and third. A muskrat tooth is present, indicating that muskrat were also trapped (along with the beaver?). A large duck is represented by one bone (and possibly a second,

All of the moose bone could come from one individual moose. Three of the bones are hoof bones, and the two of those that can be identified from from a left fore-hoof. Five teeth and mandible parts are also present. The mandible part is an articular process fragment from a left jaw, and all of the teeth are left teeth. The teeth include four deciduous upper molars ("baby teeth", or "?calf teeth") with their roots resorbing, and a premolar germ fragment (tooth still growing, not yet erupted). Thus these teeth document a moose about 15 to 18 months of age when the permanent premolars erupt and replace the deciduous molars. This specimen represents a summer to fall kill. These hoof bones come from T1 tp 20 and the teeth and mandible part from T1 tp 27, about 35 m apart, so perhaps two moose are represented. The very large mammal longbone is almost certainly moose, as well.

Fish bone constitutes 85% of the bone count at the site, while moose, deer and large mammal bone constitutes 56% of the bone weight at the site. All the fishbone constitutes about 16% by weight of the bone. So, there are various ways to quantify diet contribution to the site.

In sum, the diversity of faunal remains at the site is striking, probably representing multiple seasons of occupation and certainly representing a variety of fishing and hunting techniques. The economic base was probably clam harvesting and intertidal fishing, supplemented by a diversity of hunting and trapping activities.